Shearing time

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SHEARING time on the farm with its attendant worries will soon be coming around. NOW is the time to see that everything is in readiness so that there shall be no hold-ups during the shearing. Any stoppages during shearing are costly to the farmer, and represent a waste of valuable time for the shearsers. In order to ensure smooth shearing it is the farmer's responsibility to see that nothing over which he has control is left undone, particularly in regard to his machinery and shed equipment.

Costs in shearing are governed to some extent by the length of time taken to shear the flock. Any faults that exist in the shearing plant are a definite factor in increasing the time and the costs as they reduce the shearer's output, in many cases, by as much as 30 per cent. Unfortunately, this does not happen only in the one year, but applies year after year, totalling in the aggregate a large sum of money, sometimes more than the purchase price of a new shearing plant.

Many of the plants in present use have had their efficiency reduced by incorrect installation, while others that have been in service over a period of years have developed faults that impair their efficiency to a large extent. Mostly these faults can be rectified at small cost and with little labour, but little attention appears to be paid to the overhead gear so long as it continues to run, and too often is heard the phrase—"Everything should be all right, the handpieces have been done up." But the overhead faults are allowed to continue, costing the grower much more for his shearing. Often it is a case of "Out of sight, out of mind," and little attention is paid to this important part of the equipment. By comparison, if the tractor was not functioning properly the farmer's loss would be apparent and repairs quickly effected.

Some of the main faults that can, and do, occur in the shearing plant are dealt with in the following chapters.

SHAFTING OUT OF ALIGNMENT

This could be caused through warped planking, worn bearings, incorrect setting of the plummer blocks or brackets and in some cases is due to the uprights not being rigid, which will all cause excessive vibration in the shafting and downtube. This will lessen the shearer's control of the handpiece, retard his efficiency and speed, and increase the danger of skin cuts or more serious wounds on sheep. To eliminate these faults we must remedy the cause. Where the planking is badly warped, it should be renewed. Worn bearings will need relining or replacing, the shafting will need to be brought into proper alignment and the plummer blocks and brackets reset.

To line up the shafting the following method will be found simple and effective. Attach a piece of timber to each end of the plank and stretch a line parallel with the plank outside the friction wheels, level with the centre of the shaft. Bring the shafting true to this line and securely tighten the holding-
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down bolts. Check the shaft for level, adjusting the bracket arms up or down on the plank, using the slotted holes on the base of the bracket arms provided for this purpose.

THE GRINDER

The grinder is frequently erected in a poorly-lighted corner where it takes up the least room. It should be mounted in a roomy setting with a good light available. This is most essential, as that often a young shearer will reach a certain standard of ability in the agricultural areas, but on the first trip to the pastoral areas where he receives the benefit of expert grinding, etc., he will improve considerably in his shearing ability.

SLOW SPEEDS

Slow-running machinery is not conducive to good shearing. The correct shafting speed recommended by the manufacturer of the particular make of machine used should be maintained.

Fig. 1.—Sheep being taken to machine.

Slow speeds require more tension on the handpiece which causes it to run hot and reduces its ability to cut cleanly. To find the correct size of pulley to be used on the shafting, check engine speed with a revolution counter, multi-
ply by diameter of engine pulley and divide by shafting speed required. As an example, if engine speed is 600 RPM, multiply by diameter of engine pulley, say, 12\(\text{in.}\) gives 7,500, divide by shafting speed, say 625, which gives 12\(\text{in.}\) which will be the size of pulley required on shafting to maintain correct RPM.

Any belt-slip that occurs should be arrested, but belts should not be overtightened, or excessive wear in both the engine and shafting bearings may occur. Just sufficient tension to arrest the slip is all that is required and this tension is governed by the length and width of belt used. A low tension exerts more grip on both driving and driven wheels.

**Fig. 2.—Finishing the belly.**

**TRANSMISSION BELTS**

A slipping belt causes loss of power to the overhead shafting and reduces the speed in the handpiece, which must be maintained at 3,000 RPM for maximum efficiency.

**LEATHER FRICTION CONES**

The leather cones should make full contact with the bevel, or friction wheels, while the machine is in gear, as any slip that occurs will reduce the speed of the handpiece, particularly in
hard sheep. Close examination of older plants will sometimes reveal the friction wheel driving on only half or one-third of the surface of the friction cone. If this is found the cone will need to be trimmed with the paring chisel and bracket made for that purpose, until full contact is made and the maximum drive obtained. Some of the more up-to-date shearing plants have set-screw adjustments for this purpose.

Worn cones become small in circumference and do not present a large enough gripping area to the friction wheel and in consequence tend to slip and lose power. These should be scrapped and new cones installed. See that correct pressure is maintained between friction wheel and cone while machine is in gear. There are adjustments for this purpose.

Fig. 3.—Shearing up the neck.

DISTANCE OF DOWNTUBE FROM WALL

Insufficient distance between the downtube and wall is a common fault and is mainly caused by countersinking the planking. On many plants it is noticed that the universal joints have
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worn deeply into the wall uprights through continually striking them during shearing operations. As a result, the shearer is forced to work out of the normal position, the reach of the handpiece is restricted and excessive second cuts and inferior work are all too common. The planking should not be lighter than 10in. x 4in. and should be **bolted** directly on to the uprights. This

**DOWNTUBES**

The short tube which is affixed to the downtube should just clear the floor. This gives the maximum reach and allows comfortable and efficient working. Often the short tube hangs well up off the floor, sometimes as much as two inches or more. This reduces the range of the machine and proves very difficult to shear with, particularly in big sheep.

**Fig. 4.**—Coming up from the long blow and finishing head.

will, when the plant is erected, bring the downtubes the proper distance out from the wall. Care should be taken to see that the face of the planking is vertical and the brackets truly horizontal, otherwise the downtubes will not hang perpendicularly.

The minimum distance between the wall and downtube should be 14 inches.

**DOWNTUBE COIL SPRINGS**

The coil spring on the downtube serves to give flexibility and range. It also serves to return the downtube to its normal position after each blow is made, helps in preventing the universal joint from swinging at random and is a big factor in assisting the shearer to effectively control the handpiece, to minimise false blows and second cuts. These springs can become weak and as
a result exert no control on the downtube, which will then swing too freely and make proper control of the handpiece very difficult and, in a large measure, contribute to bad shearing. It will always pay to replace coil springs that have lost their tension.

**WORN COGS IN UNIVERSAL JOINT**

Universal joint cogs are subjected to considerable strain and when worn will cause chattering in the handpiece, particularly when the machine is fully extended when finishing off on the hind leg. Often, worn universal parts will cause a peculiar rope-like cut on the bottom tooth of the comb, which is frequently mistaken for a handpiece fault.

**FERRULES**

Joint ferrules that show excessive wear, or become loose, will affect the cutting ability of the handpiece and will also cause it to chatter slightly. Both back joint and universal ferrules should be tightly screwed up at all times and should be renewed if excessively worn.

**SAFETY CLUTCH**

Lately there has come on the market a combination safety clutch and short gut core which is designed to reduce the accident risk. This safety clutch only
operates when locking occurs in the handpiece. Locking could occur as a result of foreign matter in the wool, such as sticks, or carelessness in assembling the comb and cutter, etc. Should the handpiece lock the safety clutch comes into operation and instead of the handpiece being violently wrenched from the hand, the gut cores can run freely until the machine is thrown out of gear. This can protect the shearer from possible serious injury and at the same time eliminate the risk of breakage of tools or gut cores and for these reasons is an acquisition in any plant. Full instructions are supplied by the makers.

DISTANCE BETWEEN STANDS

Shearing stands erected too close together can reduce the shearer's efficiency and can cause injury to both man and sheep. The minimum distance between stands by regulation is 5ft. 2in. Styles of shearing vary, some shearers work back, others slightly forward from the downtube. Young shearers are often out of position when shearing. Quite frequently as one shearer is removing the belly or crutch wool, the shearer on the next stand is finishing his sheep. This can and does result in the hind legs of both sheep becoming intermingled. This hampers both shearers considerably and the risk of accident or injury to man and sheep is increased. Even though no accident occurs the risk is always present when stands are too close and the shearer's attention is unduly focussed on the man working beside him, to the detriment of his own shearing. Stands could be placed 6ft. apart and would be better to be too wide apart than too close together.

CHUTES

Frequently the chutes to the counting out pens are not placed in the right position. This appears to be of little importance, but wastes time and can increase the work on the board and wool table as a result of the fleece becoming tangled when the shearer attempts to get the shorn sheep down the chute. In addition to wasting the shearer's time, the fleece cannot be picked up and thrown correctly when it is tangled and broken on the board. This results in delay and often poor work on the wool rolling table.

The proper position for the chute is six inches to the right of the downtube when viewed from the board.

HOT OR FULL SHEEP

It is a big mistake to pen for immediate shearing any sheep that have been brought straight in from the paddock, most probably bustled along and are hot and full. Sheep should always be given at least two to four hours to empty out and cool down in the yards. Sheep that are hot will be distressed during shearing and can "blue tongue" and die on the board as a result. Full sheep will kick and strain, making control and shearing very difficult. This is hard on both man and sheep.

A large proportion of the sheep in the farming areas are penned for shearing while still hot and full. Observation will reveal that sheep left in the shed overnight will be much quieter to shear than those brought in from the paddock and put straight on to the board.
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